David Garrett & Associates
Engineering and Geology

Permit No.	Date	Document ID No.
41-17	**March 16, 2010**	**10016**

December 21, 2009

Mr. Ed Mussler, PE
NC DENR Solid Waste Section
1646 Mail Service Center
Raleigh, NC 27699-1646

RECEIVED
February 3, 2010 via a mail
Solid Waste Section
Raleigh Central Office

RE: Six-Month Demonstration Report
A-1 Sandrock, Inc. C&D Landfill and Processing Facility
Guilford County, NC (Permit #41-17)

Dear Mr. Mussler:

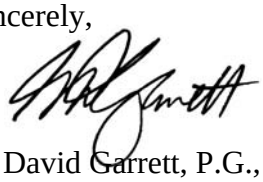
On behalf of A-1 Sandrock, I am pleased to present the following report that summarizes operations at the referenced facility. This report was prepared pursuant to Condition #40 of the Permit to Operate (SWS Document #7222). The report presents a summary of activities, including waste intake and recycling performance, environmental compliance, and suggested changes to the permit. The site has been visited by various WSRO staff, including Solid Waste, Land Resources and Water Quality, and there have been no documented violations of the permit.

At this time, I am pleased to inform you that the facility performance exceeds our initial expectations, with respect to the recycling, despite the economic conditions of the region. I will be glad to meet you or representatives if requested to review site conditions and operational performance. This report is organized into the following sections: 1) Overview of Operations, 2) Environmental Monitoring, 3) Response to PTO Conditions #32 - #41, 4) Suggested Changes. For your convenience, I have included plan maps and photographic documentation.

This report covers the time period from April 17, 2009 (issuance date for the PTO) through December 31, 2009, i.e., the initial six months of operation. The Owner (Mr. Petty) is aware of the requirement for an Annual Report, addressed in Condition #27 of the PTO.

Please contact me if you have questions or if I can provide any additional data.

Sincerely,



G. David Garrett, P.G., P.E.
Consulting Engineer

cc: Ronnie Petty–A-1 Sandrock, Inc.

5105 Harbour Towne Drive • Raleigh • North Carolina • 27604
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1.0 Overview of Operations

A-1 Sandrock, Inc. commenced operation of its C&D recycling and disposal activities in late April 2009. Currently, there is a six to ten-man crew on site who work under the supervision of two or more field managers and a certified and highly experienced general site manager, a scale operator and other administrative staff, a collections coordinator (for the affiliated hauling firm), plus daily oversight by the Owner (who is a certified operator). Waste intake during the initial six-months has been below the permitted daily intake of 300 tons per day, due to regional economic conditions that have slowed down the generation of C&D throughout the service area. These conditions provided an opportunity for the startup operation to fine tune its day-to-day procedures and establish efficient patterns of material handling. All waste handling activities are handled within areas that are protected by approved Sedimentation and Erosion Control measures. So far, the operational compliance has been excellent.

Please refer to the enclosed facility plan drawings. The disposal area is limited to the authorized Phase 1, Cell A (2.54 acres), with activities in other portions of Phase 1 consisting of the LCID processing (Cell B) and active sandrock mining (Cell C). A slight deviation from the anticipated conditions presented in the Facility and Operations Plan documents, Revision 0.1 (3/31/09), is that initially the C&D recycling activities were proposed to be conducted in a portion of Cell B, whereas the facility staff developed an ingenious method of recycling C&D in proximity to the working face of the disposal unit (described below and addressed in **Section 4.0**). This activity enhances waste processing efficiency and improves in-situ density, while maintaining the required minimum separation of 50 feet to the processing areas. The Solid Waste Section compliance staff (WSRO) has been notified of this refinement and have observed the facility in operation. The following text and accompanying photographs describe the operation in detail.

Incoming Loads–Much of the waste intake is hauled by an affiliated hauling company or regular customers, who are made aware of the allowable and non-allowable waste streams. All loads must cross the scales, where they are weighed in and recorded. Drivers are directed to appropriate unloading areas by the scale operator and by directional signs. Presorted loads are directed close to the appropriate recycling area (LCID or C&D); non-sorted loads are directed to a stockpile located in Cell A. Concrete debris reports to a special area that only handles this unique waste. There is no commingling of the waste streams, except that concrete from either LCID or C&D loads are culled out of non-sorted loads and taken to the concrete processing area.

Unloading and Inspection–The tipping area for C&D is within the western portion of Phase 1, Cell A. The tipping area shifts periodically to accommodate the position of the recycling equipment and the disposal area. All loads are sorted and inspected by the staff – refuse containers are kept nearby for non-allowable materials that might inadvertently come in with a non-sorted load. The tipping area for LCID is located in Cell B and is kept entirely separate from the C&D operations. Concrete debris is received and processed in a separate area from the other two processing areas – this material requires different handling and processing equipment and procedures. Operators for each receiving and processing area are trained to spot non-allowable materials and remove them from the respective operational areas.

Processing and Storage – Woody LCID is processed by grinding the material (with a tub grinder) into various grades of mulch (**see Table 1**), which is stockpiled within Cell B or within customer-accessible bunkers near the facility entrance. Operation of the tub grinder is conducted at such times when customers are not present. The tub grinder is situated more than situated at least 200 feet from the unloading areas (where customers are likely to be). Similarly, concrete debris is ground (with a portable rock crusher, which does dual duty for crushing the occasional boulder encountered in the mining operations), in an area that is removed from public access and during times when customers are not present. The rock crusher is not prone to throwing particles into the air, such as can occur with the tub grinder. Concrete waste is processed into aggregate and stockpiled in the bunker are, if not hauled out immediately.

The C&D stockpile is picked through with a powerful hydraulic jaw-like device (similar to a cherry picker) mounted on an excavator, with sufficient grip to crush the waste to manageable particle sizes. Some sorting may occur at this stage of the handling, but most of the waste is passed through a mechanical screener and then across a portable picking line with a dozen manual picking stations. The picking stations are elevated such that sorted materials may be dropped through openings into roll-off bins situated on the ground below. The picking line has a cover to protect the workers – future plans might include side curtains to further protect workers and control wind impacts on the picking line. The relatively high density of the disposed waste helps minimize windblown debris from the working face.

The recyclable C&D materials are stored in the bins within Cell A until they are shipped – usually on a weekly basis, or several times per week depending on the commodity. Typically there are no stockpiles of finished goods left at the end of a week. End-of-the-line refuse is conveyed to a small stockpile that is pushed into the working face of the disposal area several times per day. The working face is typically under a half-acre in size and covered weekly with soil, per Division of Waste Management requirements. The only stockpiles of C&D materials on site are the intake stockpile, which is typically kept under 6,000 cubic yards and is processed every day. No C&D waste is left uncovered for more than a week. Any non-allowable wastes are placed in roll-off containers and taken off the premised (to the transfer station) on a weekly basis. The facility operates six days a week and allowable materials are processed into salable commodities or disposed in accordance with the regulations and the Operations Plan on a consistent basis – there are no long-term waste stockpiles or nuisance conditions allowed to persist on the site.

2.0 Environmental Monitoring

Workers police the grounds daily for windblown debris and for signs of erosion or excess sediment buildup. A daily inspection form (developed by the facility on a volunteer basis) has been used to maintain thorough and regular compliance inspections. Now that the facility has been established its operational protocols, the use of the daily form is no longer considered necessary. The inspection will be changed to a weekly requirement – discussed in **Section 4.0**. Ground water and landfill gas sampling was conducted in October 2009 (beginning an April-October schedule) and periodic storm water inspections are up to date.

3.0 Response to PTO Conditions #32 - #41

Item #32 - This work documents the **Sorting and Recycling Demonstration Project** described in the PTO. All activities have been in accordance with the approved Operations Plan and applicable regulations to the best of the Owner's and Operator's knowledge.

Item #33 - Only acceptable C&D and LCID wastes have been accepted for recycling.

Item #34 - The maximum material storage volumes have not been exceeded, but the facility has not operated at the anticipated daily capacity of 300 tons per day–the intent of the demonstration project was to give the Owner/Operator an opportunity to refine his allowable stockpile numbers once into the operations; the initial six months of operation may not adequately represent conditions at full capacity.

Thus the Owner requests the opportunity to amend the allowable stockpile volumes at a later time, subject to waste intake – which will be dependent on the regional economic recovery. A tally of the tonnages of various materials processed at the facility, along with the materials shipped from the facility as recycled products, is presented on **Table 1**.

Item #35 - All recyclable items are placed in covered roll-off boxes, and all non-recyclables are placed in the C&D disposal areas at the end of each day.

Item #36 - A minimum 50-foot buffer is maintained between the C&D working face and the processing area.

Item #37 - Interim stage LCID and C&D wastes does not occur–typically these waste streams are processed into separate finished products, thus there is to reason to commingle the waste streams for the way the processing areas are set up, with the exception of concrete debris, which is processed in a separate area from either LCID or C&D materials–this aspect of the operation will be discussed as a change condition under **Section 4.0**. The finished goods, i.e., boiler fuel, mulch, and aggregate, are combined.

Item #38 - No grinding of wastes is conducted in the rain.

Item #39 - Dust and windblown debris are controlled in accordance with the Operations Plan.

Item #40 - This report was prepared as a condition of the PTO, which states that the demonstration project may be extended at the discretion of the Solid Waste Section–given the slow intake of waste during the initial six months, due to persisting slow regional economic conditions, the Owner requests that the Demonstration be extended.

Item #41 - meticulous documentation of end-use shipments is being kept by the facility.

4.0 Suggested Changes

Three issues the Owner/Operator believes need to be changed at this time:

1. The layout of the processing facility, which keeps the LCID and C&D processing areas separate but which allows C&D recycling near the working face should be acknowledged in future permit documents – a revision of the Operations Plan will be prepared at the end of the extended Demonstration project. This innovative technique is enhancing the recycling percentages (see Table 1) and improving the overall safety and compliance of the facility, as well as enhancing efficiency and waste density.
2. Voluntary completion of inspections forms should be changed to a weekly form, rather than a daily form–the Operator is experienced and has established a good daily routine for maintaining compliance; the form was originally intended to serve as a supplemental guideline during start up for the facility – now this level of record keeping is no longer considered needed.
3. Co-mingling of concrete debris only from LCID and C&D sources is considered needed to make the handling and processing of this unique material more efficient; rather than two processing areas – one for the C&D concrete and one for the LCID concrete – the Owner desires to bring all concrete debris to a central, stationary processing area; no other interim-stage products will be co-mingled in this manner.

The Owner wishes to extend the Sorting and Recycling Demonstration Project, upon completion of which the Operations Plan will be updated. An issue that cannot be accurately estimated at present is the potential need for additional allowance of material storage, but if the future operations continue as well as the initial six months, the amount of material stockpiled on-site is not expected to differ significantly from the allowances specified in the permit. This concludes the response to the six-month requirements.

Table 1
A-1 Sandrock, Inc., CDLF and Processing Facility
Six-Month Operations Update - Recycling Volumes

This summary of recycling volumes was prepared from scale house records
for the period covering April 17, 2009 (PTO issued) thru October 31, 2009

The records include C&D wastes only, not LCID wastes processed nearby

All quantities are reported in tons

TOTAL C&D WASTE INTAKE	8957.56

RECYCLED MATERIALS BY CATEGORY

1. Concrete - recycled into three grades of aggregate

#57 stone (equivalent)	469.00	
ABC stone (equivalent)	2126.00	
Surge stone (#2 and larger	206.00	
TOTAL RECYCLED CONCRETE		2801.00

2. Cardboard

TOTAL RECYCLED CARDBOARD	53.46

3. Metals - sorted by type

Aluminum	17.53	
Copper/brass	3.88	
Iron/steel	17.43	
Scrap metal	163.60	
TOTAL RECYCLED METALS		202.44

4. Wood - recycled into three products

Boiler fuel	18.00	
Coarse Mulch*	63.40	
Fine Mulch*	6.00	
TOTAL RECYCLED WOOD		87.40

*The average moist unit weight for mulch is 400 lb / c.y.

RECYCLED GOODS - SHIPPED OFFSITE	3144.30
FINES (DIRT) - STOCKPILED ONSITE	1660
MATERIALS USED ONSITE (ROADS, COVER)	500
TOTAL C&D RECYCLED	5304.30
SHIPPED OFFSITE AS PERCENTAGE OF TOTAL INTAKE	35%
TOTAL RECYCLED AS PERCENTAGE OF TOTAL INTAKE	59%

REFERENCE NOTES:

1. GUILFORD COUNTY TAX MAP FOR SUMTER TOWNSHIP: ACL-3-185-755S-7, D.B. 4459, PG. 780.
2. TOPOGRAPHY WITHIN PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 3-27-01, BY SPATIAL DATA. TOPOGRAPHY OUTSIDE PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 1995, BY GUILFORD COUNTY GIS DEPARTMENT.
3. BOUNDARY INFORMATION FROM BOUNDARY MAP PREPARED BY L. DENNIS LEE, P.A., DATED NOV. 14, 2002.

CITY OF GREENSBORO
MONUMENT 268 W 200
NAD 83 COORDINATES
N=817,233.63456
E=1,749,238.54876
NGVD 29 ELEV. 783.30

RM445 ELEV. 742.90
NAIL IN U.S.C.E. CAP IN
S.E. WINGWALL OF BRIDGE

E 1748500 E 1749000 E 1749500 E 1750000 E 1750500 E 1751000

N 817000 N 816500 N 816000 N 815500

FACILITY BOUNDARY
SCALE HOUSE AND OFFICES
JURISDICTIONAL WETLANDS
FACILITY BOUNDARY
COLONIAL PIPELINE RIGHT-OF-WAY
50' COLONIAL PIPELINE RIGHT-OF-WAY
ACCESS ROAD
CONCRETE PROCESSING AREA
100-YEAR FLOODPLAIN
NOT DISTURBED
NOT DISTURBED
SANITARY SEWER EASEMENT
EXIST. SED TRAP "A"
W CITY OF GREENSBORO SANITARY SEWER RIGHT-OF-WAY
EXIST. SED TRAP "A-2"
EXIST. SED TRAP "A-3"
EXIST. SED TRAP "B-1"
EXIST. SED TRAP "B-2"
EXIST. SED TRAP "B-3"
EXIST. SED TRAP "C-1"
EXIST. SED TRAP "G"
RIPARIAN BUFFER
50'
50'
C&D PROCESSING AREA AS OBSERVED 8-27-09
EXIST. SED TRAP "J"
CONTAINER STAGING
TIPPING AREA
DISPOSAL AREA
UNPROCESSED MATERIAL STOCKPILE
MECHANIZED PICKING LINE
ALL RUNOFF FROM OPERATIONAL AREAS IS BEING CAPTURED AND CONTAINED IN APPROVED MEASURES
LCID PROCESSING AREA AS OBSERVED 8-27-09
FUTURE PHASE 1C ACTIVE MINING AREA
FACILITY BOUNDARY
EXIST. SED TRAP "I"
TIPPING AREAS ARE ISOLATED FROM PROCESSING AREAS BY STOCKPILES, BARRICADES AND AQEQUATE DISTANCES TO PROTECT THE PUBLIC
TIPPING AREA
LCID STOCKPILE
TUB GRINDER
LCID STOCKPILE
LCID STOCKPILE
SOIL STOCKPILE
SOIL STOCKPILE
FUTURE PHASE 2 AREA
FUTURE PHASE 3 AREA
200' BUFFER
200' BUFFER
FACILITY BOUNDARY
ABANDONED STRUCTURES TO BE RAZED
HICKORY CREEK
REFER TO THE GROUND WATER AND METHANE MONITORING PLANS

SW-1 SW-2 SW-3 SW-4
MW-1 MW-2 MW-3 MW-4 MW-5
LG-1 LG-2 LG-3 LG-4 LG-5 LG-6 LG-7

THIS DRAWING IS FOR INFORMATIONAL PURPOSES ONLY – DO NOT USE FOR FUTURE CONSTRUCTION

BASE GRADES SHOWN HERE ARE AS PERMITTED IN FEBRUARY 2004 BY NCDENR DIVISION OF WASTE MANAGEMENT (PERMIT #41-17). AS-BUILT SURVEY FOR PHASE 1A COMPLETED IN DECEMBER 2006 BY DENNIS LEE, RLS.

0 100' 200' 300'
1" = 100'

DATE	NO.	REVISION
01/24/06	1	REVISED CELL LAYOUT PER OWNER
02/18/09	2	UPDATED C&D PROCESSING FACILITY FOR PERMIT TO OPERATE
10/05/09	3	SIX MONTH UPDATE FOR C&D PROCESSING FACILITY

E:\H&H-CAD\CAD\DGARRETT\sandrock-2\sheets\PHASING-REVISED\SROCK-0091.dwg DATE: JAN 13, 2006 TIME: 2:00 PM

David Garrett, PG, PE.
Engineering and Geology
5105 Harbour Towne Drive, Raleigh, North Carolina 27604
Email: david_garrett_pe@mindspring.com 919-231-1616 (Office and Fax) 919-418-4375 (mobile)

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL DAVID GARRETT
12-10-2009

PROJECT TITLE:
A-1 SANDROCK SOUTH MINE
OPERATIONS AND CLOSURE
GUILFORD COUNTY, N.C.
SOLID WASTE PERMIT #41-17

DRAWING TITLE:
SIX MONTH UPDATE FOR
RECYCLING AND DISPOSAL
PHASES 1A AND 1B

DESIGNED BY: G.D.G.	DRAWN BY: A.W.H.
CHECKED BY: G.D.G.	PROJECT NO.: SANDROCK-2
SCALE: AS SHOWN	DATE: OCTOBER 2009
FILE NAME: SROCK-0091_SIX-MONTH	
SHEET NO.: 1A	DRAWING NO.: E1A

REFERENCE NOTES:

1. GUILFORD COUNTY TAX MAP FOR SUMTER TOWNSHIP: ACL-3-185-7555-7, D.B. 4459, PG. 780.
2. TOPOGRAPHY WITHIN PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 3-27-01, BY SPATIAL DATA. TOPOGRAPHY OUTSIDE PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 1995, BY GUILFORD COUNTY GIS DEPARTMENT.
3. BOUNDARY INFORMATION FROM BOUNDARY MAP PREPARED BY L. DENNIS LEE, P.A., DATED NOV. 14, 2002.

RIGHT-OF-WAY

ACCESS ROAD

CONCRETE PROCESSING AREA

EXIST. SED TRAP "A-3"

EXIST. SED TRAP "B-1"

NOT DISTURBED

NOT DISTURBED

EXIST. SED TRAP "A-2"

EXIST. SED TRAP "B-2"

EXIST. SED TRAP "B-3"

EXIST. SED TRAP "C-1"

EXIST. SED TRAP "A"

50' CITY OF GREENSBORO SANITARY SEWER RIGHT-OF-WAY

EXIST. SED TRAP "G"

RIPARIAN BUFFER

50'

50'

C&D PROCESSING AREA AS OBSERVED 10-31-09

ALL RUNOFF FROM OPERATIONAL AREAS IS BEING CAPTURED AND CONTAINED IN APPROVED MEASURES

LCID PROCESSING AREA AS OBSERVED 10-31-09

EXIST. SED TRAP "I"

CONTAINER STAGING

FUTURE PHASE 1C ACTIVE MINING AREA

TIPPING AREA

TIPPING AREA

DISPOSAL AREA

UNPROCESSED MATERIAL STOCKPILE

LCID STOCKPILE

MECHANIZED PICKING LINE

TUB GRINDER

LCID STOCKPILE

EXIST. SED TRAP "D"

200' BUFFER

TIPPING AREAS ARE ISOLATED FROM PROCESSING AREAS BY STOCKPILES, BARRICADES AND AQEQUATE DISTANCES TO PROTECT THE PUBLIC

SOIL STOCKPILE

SOIL STOCKPILE

200' BUFFER

EXIST. SED TRAP "E"

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0 50' 100' 150'
1" = 50'

David Garrett, PG, PE.
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Email: david_garrett_pg@mindspring.com
919-419-4375 (mobile)
919-231-1818 (Office and Fax)

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16982 DAVID G. GARRETT 10-5-2009

PROJECT TITLE:
A-1 SANDROCK SOUTH MINE
OPERATIONS AND CLOSURE
GUILFORD COUNTY, N.C.
SOLID WASTE PERMIT #41-17

DRAWING TITLE:
SIX MONTH UPDATE FOR RECYCLING AND DISPOSAL PHASES 1A AND 1B

DESIGNED BY: G.D.G.	DRAWN BY: A.W.H.
CHECKED BY: G.D.G.	PROJECT NO.: SANDROCK-2
SCALE: AS SHOWN	DATE: OCTOBER 2009
FILE NAME: SROCK-D091_SIX-MONTH	
SHEET NO. 2A	DRAWING NO. E2A

E:\H&H-CAD\CAD\DGARRETT\sandrock-2\sheets\PHASING-REVISED\SROCK-D091.dwg DATE: JAN 13, 2006 TIME: 2:00 PM


CAT
320
CAT
EXTEC
A-1 SANDROCK


CAT
EXTEC
EXTEC
EXTEC


CAT
320
CAT
EXTEC


EXTEC
CATERPILLAR
A1 SANDROCK


CWS


CWS
it's time for a change


CWS


D.H. GRIFFIN
Wrecking Co., Inc.
CN 594
CN 564


Gilbreath
CONTAINER WARNING
CAUTION
DO NOT PLAY IN, ON, AROUND OR OCCUPY THIS CONTAINER


Galbreath
CONTAINER WARNING
CAUTION
DO NOT PLAY IN, ON, AROUND OR OCCUPY THIS CONTAINER


VARIFORM


CN 636


CAT


A-1 SANDROCK


CWS
CWS
ARC


CAT
320